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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,512	07/08/2005	Takashi Fukutomi	OGW-0371	1667

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EXAMINER

FISCHER, JUSTIN R

ART UNIT	PAPER NUMBER
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1733

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,512	FUKUTOMI ET AL.	
	Examiner	Art Unit	
	Justin R. Fischer	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga (JP 52145904) and further in view of Kitamura (JP 58194970) and Kanenari (US 6,209,603). The references are applied in the same manner as set forth in the Non-Final Rejection mailed on November 2, 2006.

As best depicted in Figure 1, Suga discloses a pneumatic tire construction having an adhesive sealant layer 2 comprising a rubber component to be decomposed by peroxide (e.g. butyl rubber) and 0.1 to 0.8 parts by weight of peroxide per 100 parts by weight of said rubber component (Abstract). Suga, however, is completely silent with respect to the inclusion of reinforcing fibers in the sealant layer. In any event, it is extremely well known to include reinforcing fibers in a wide range of tire components, including similar adhesive sealant layers, in order to provide a high degree of strength and reinforcement, as shown for example by Kitamura (Abstract) and Kanenari (Column 1, Lines 5-10). It is particularly noted that Kitamura is directed to an extremely similar tire construction in which short fibers are included in an adhesive sealant layer. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to include reinforcing fibers in the adhesive

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sealant layer of Suga. It is emphasized that reinforcing members are commonly included in a wide variety of tire components to provide a desired degree of strength/reinforcement. Lastly, as to the specific dimensions of the short fibers, Kanenari suggests that the claimed lengths are consistent with the commonly used fibers in the tire industry (Column 18, Lines 45+).

As to claim 2, the tire of Suga includes a protective rubber layer 3 (cover sheet rubber layer).

With respect to claim 3, the claim language is directed to the method of forming the tire and does not further define the claimed tire construction.

As to claims 4 and 5, the sea-island structure required by the claimed invention represents one of the common arrangements of fibrous reinforcement in the tire industry, as shown for example by Kanenari (Column 2, Lines 10-15 and Column 18, Lines 63+). In this instance, Kanenari suggests that such a structure is able to provide an effective amount of reinforcement, as opposed to prior art constructions in which short nylon fibers were used.

Response to Arguments

3. Applicant's arguments filed February 16, 2007 have been fully considered but they are not persuasive.

Applicant initially argues that the examiner has failed to show that the alleged fiber of Kitamura has an average length of 100 to 5000 μm . As detailed in the rejection above, it is extremely well known to include short fibers in a wide variety of tire components, including adhesive sealant layers, in order to improve the reinforcement

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characteristics of the respective component, as shown for example by Kanenari and Kitamura. It is emphasized that the adhesive sealant composition of Kitamura, which is described as generally including short fibers, is extremely similar to the adhesive sealant composition disclosed by Suga. Thus, the references expressly recognize the known use of short fibers in adhesive sealant compositions used in the tire industry. As to the particular type of short fiber, Kanenari discloses a specific type of short fiber used in the tire industry that provides advantages over previously used short fibers, such as nylon (Column 1, Lines 30-38). In this instance, Kanenari generally discloses the use of such fibers in a wide variety of tire components, including the tread, sidewall, bead reinforcing layer, bead fillers, and belt reinforcing layers (see Figures). While Kanenari fails to expressly suggest using such fibers in a tire adhesive sealant composition, a fair reading of Kanenari suggests the general use of such fibers in tire components as they provide improved reinforcement properties over previously used short fibers, such as nylon. There is nothing in Kanenari that teaches away from using these fibers in a tire adhesive sealant composition, wherein only the expected results (improved reinforcement properties) would be obtained in modifying the tire adhesive sealant composition of Suga with the fibers disclosed by Kanenari.

In regards to the dimensions of the short fibers, the claim defines an extremely broad range of values which is fully encompassed by the disclosure of Kanenari. In using the fibrillated short fibers of Kanenari, one of ordinary skill in the art at the time of the invention would have used fibers having dimensions that are consistent with

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Kanenari. In this instance, Kanenari suggests the use of fibers having an average length between 1 and 5,000 μm .

With respect to Kitamura, the reference suggests the inclusion of fillers, such as silica, glass, or short fibers. While the specific short fiber is not disclosed, one of ordinary skill in the art at the time of the invention would have found it obvious to use the fibrillated short fibers of Kanenari as they are generally described as providing high reinforcement characteristics in tire components and they are described as providing advantages over previously used short fibers, such as nylon.

As to Kanenari, applicant argues that the office action fails to explain why the skilled artisan would have been motivated to replace the alleged layer 2 of Suga with the compound sheets of Kanenari. The rejection, as detailed above, does not involve using the compound sheet of Kanenari in the tire of Suga- the rejection involves the use of a specific type of fiber reinforcement in the tire adhesive sealant composition of Suga. Given the known use of short fibers in adhesive sealant compositions and the disclosed benefits of the particular type of claimed fiber, one of ordinary skill in the art at the time of the invention would have been motivated to include the claimed fibers in the adhesive composition of Suga.

With respect to the experiments of Table 1, the experiments are not found to provide a conclusive showing of unexpected results. First, Kanenari expressly recognizes that using fibers with an average length above 5000 μm results in poor processability (Column 18, Lines 45-65). As to Application Example 1 and Comparative Example 1, the results suggest a slight improvement in seal performance; however, in

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this instance, the results are presented in the form of general evaluations and it is unclear how significant the differences are between the respective compositions (both have good processability and seal performance). In this instance, the table is not seen to provide a conclusive showing of unexpected results for the claimed range between 100 and 5,000 μm .

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Justin R Fischer
Primary Examiner
Art Unit 1733

JRF
March 5, 2007